

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-8 and 11-14 are presently active in this case, Claim 1 having been amended to include the features of Claims 9-10, Claims 11-14 having been amended to depend from amended Claim 1, and Claims 9-10 and 15-20 having been canceled by the present amendment. No new matter has been added.

In the outstanding Office Action, Claims 1-6 were rejected under 35 USC §102(b) as anticipated by Zulian et al. (USP 5,701,413, hereinafter “Zulian”); Claims 7-8 were rejected under 35 USC §103(a) as being unpatentable over Zulian in view of Cohen (USP 6,026,464); Claims 9, 10, 15 and 16 were rejected under 35 USC §103(a) as being unpatentable over Zulian in view of Waldecker et al. (USP 4,669,056); and Claims 11-14 and 17-20 were rejected under 35 USC §103(a) as being unpatentable over Zulian et al. in view of Waldecker et al. and Cohen.

In light of the outstanding grounds for rejection, Claim 1 has been amended to include the subject matter of original Claims 9 and 10, which have been canceled. In view of the amendment to Claim 1, amended Claim 1 is believed to be clearly patentably distinguishing over the cited prior art, for the reasons next discussed.

As is evident from amended Claim 1, the present invention utilizes the creation and application of transfer directives to establish and control communication of data. Accordingly, Claim 1 recites, in part, a transfer controller that sends a transfer directive to the network and memories. The network transfers data based on the transfer directive at a predetermined timing. Also the memories receive and store data from the network based on the transfer directive. In the disclosed embodiment, for example, the transfer controller 203 receives a data transfer request from a prescribed requester and proceeds to secure a network

connection to the network 201, conduct macro access arbitration such that the memory module to be accessed is used effectively, and secure authorization to access the macro. Then, in consideration of the transfer timing, the transfer controller 203 directs the requester to transfer the data, sends switching information to the network, and sends a command to the memory module. That is to say, the transfer controller controls data transfer timing for the memories, the network and the requester by using the transfer directive. Zulian neither discloses the concept of transfer directives, or their use, or their functionality.

Furthermore, amended Claim 1 recites a module arbitration unit which also is not is evident in Zulian. Instead, in Fig. 3 of Zulian, a system controller 15, which is believed to correspond to the transfer controller recited in Claim 1, has a logic 70 for arbitrating access to the system bus. The logic 70 receives access requests from processors and grants access to the system bus by sending a response signal ABGRANT(i) on one of a plurality of point to point connections with the various processors. In contrast, according to the claimed invention, there is provided a module arbitration unit that includes module arbiters that hold the transfer request and arbitrates transfer requests for each module. By performing arbitration of the network and arbitration of the memory modules taking into account the control of the macros of the memory modules, the claimed invention makes it possible to perform scheduling at the cycle level, by which it is possible to reduce or even eliminate the need for a large-capacity intermediate buffer. Furthermore, by performing network arbitration in synchronization with the access timing of the memory modules, the network resources can be used effectively without occupying the network continuously in the conventional manner.

Further, it is respectfully submitted that the cited secondary references do not cure the deficiencies of the Zulian reference above discussed. The outstanding Office Action relies on Cohen as teaching a data transfer system as claimed in claim 1, wherein the plurality

of modules includes a plurality of macros the data is divided to be stored by the plurality of macros. It is the Applicants' view, however, that Cohen, like Zulian, does not disclose the module arbitration unit as recited in Claim 1.

The outstanding Office Action finds that Waldecker disclose a module arbitration unit. Waldecker in its abstract notes, "[o]ne or more of the processors have means for monitoring the bus in order to determine whether an address on the bus has been transferred to the first or the second storage unit during a particular transfer interval." Thus according to Waldecker the bus is monitored to determine if an address on the bus is transferred to the first or second storage unit. Contrary to this, the module arbitration unit as recited in Claim 1 arbitrates of decoded data transfer requests on a per-module basis. That is to say, the claimed module arbitration unit arbitrates a data transfer request, whereas Waldecker's "means for monitoring" determines where the address is transferred. In view of this distinction, it is respectfully submitted that Waldecker does not cure the deficiencies of Zulian and Cohen and that the amended claims patentably distinguish over the cited references.

Consequently, in view of the present amendment and in light of the above comments, no further issues are outstanding, and the amended claims are believed to be allowable. An early and favorable action to that effect is respectfully requested.

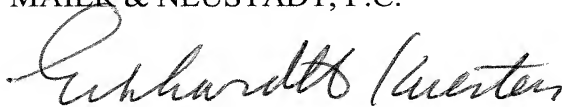
Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870